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## Background

Patients with poor asthma control are at a risk for asthma exacerbations and potential mortality. Data on asthma control is limited in indigent patients.<sup>1</sup> EMKCHC-Framingham serves a multicultural and multilingual indigent population at risk for asthma related complications.

## Objectives

- To assess the effectiveness of a telephone interview questionnaire based on the Asthma Therapy Assessment Questionnaire and the NHLBI asthma guidelines to identify patients with uncontrolled asthma<sup>2,3</sup>
- To identify patient characteristics that are associated with poor asthma control

## Methods

Over seven months, fifteen PharmD students on their advanced pharmacy practice experiences collected information from medical charts and conducted the interviews.

- Inclusion**
- 326 adult patients identified with asthma from ICD codes
  - 49 patients did not have chronic asthma on chart review
  - 10 patients did not have a working phone number

- Chart review**
- 267 charts reviewed
  - Information collected included demographics, influenza vaccination within past year, current asthma medications, tobacco use

- Phone interview**
- 148 patients contacted, 21 patients declined, 127 patients interviewed
  - Informed consent was obtained verbally. Interviews were conducted via telephonic interpreters when necessary. Students followed a script.
  - Each patient was asked 6 questions regarding their asthma. Students tallied the points as indicated by the data collection sheet. Answers were entered into medical charts.
  - Patients with scores  $\geq 1$  were identified as having uncontrolled asthma. These patients were told that someone would get back to them regarding an appointment with a provider. Students notified the primary investigator who provided the information to the medical director or provider for triage.
  - Patients were called a maximum of 3 times before they were determined unreachable (119 patients)

### Questions and scoring

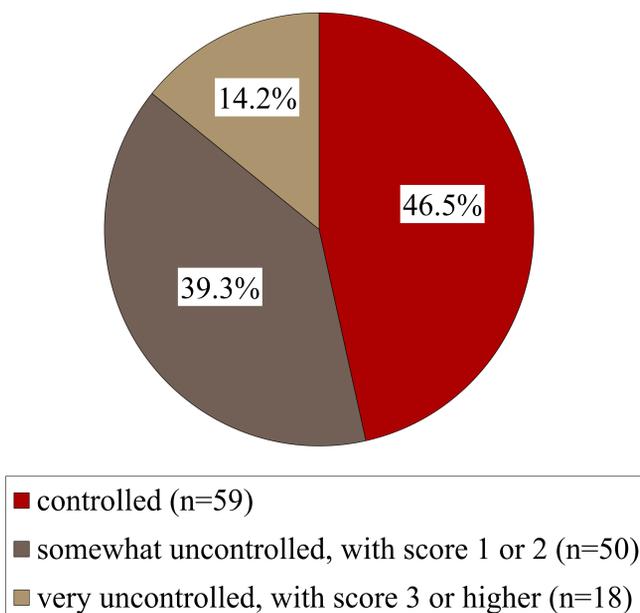
Students were instructed to ask the questions only and then to choose the most appropriate option based on the patient's answer.

- When were you first prescribed medications for breathing difficulty?
  - Within the past year
  - Over a year ago
- During the day in the past 4 weeks, how often have you had breathing difficulty?
  - No daytime difficulty
  - Less than 2 times a week
  - More than 2 times a week but less than every day
  - Every day but not all day long (1 point)
  - All day long (1 point)
- At night in the past 4 weeks, how often have you had breathing difficulty? (1 point for any nighttime awakening)
  - No nighttime difficulty
  - Less than or equal to 2 times per month
  - More than 2 times per month
  - More than 1 time per week but not every night
  - Often every night of the week
- In the past 4 weeks, did you miss any work, school or normal daily activities because of breathing difficulty? (1 point for YES)
- Do you believe your breathing was well controlled in the past 4 weeks? (1 point for NO)
- Do you use an inhaler for quick relief from breathing problems? If yes, what is the highest number of puffs in 1 day you took of this inhaler? (1 point for more than 12)

### Demographics of interviewed patients

Characteristic	Percent
Age 20-29	13.4%
Age 30-39	26%
Age 40-49	24.4%
Age 50-64	22.8%
Age > 65	13.4%
Females	70%
English speaker	30.7%
Spanish speaker	18.1%
Portuguese speaker	48%
Tobacco use	23.6%

### Asthma status of interviewed patients (n=127)



## Results

- Of the 127 patients interviewed, 53.5% had uncontrolled asthma.
- There were no statistically significant differences in age, language or sex between the patients interviewed vs. not interviewed and between the patients interviewed vs. those who declined an interview.
- Age, sex, current influenza vaccine, inhaled corticosteroid prescription, and number of asthma medications were not associated with uncontrolled asthma.
- Patients with uncontrolled asthma (score  $\geq 1$ ) were more likely to have asthma for greater than 1 year (92% vs. 84%,  $p=0.03$ ).
- Patients with very uncontrolled asthma (score  $\geq 3$ ) vs. all other interviewed patients were more likely to smoke (44% vs. 20%,  $p=0.02$ ), more likely to be English speaking (50% vs. 38%,  $p=0.04$ ) and were less likely to be Portuguese speaking (22% vs. 52%,  $p=0.01$ ).

## Summary & Conclusion

This simple telephone questionnaire was effective in identifying patients with uncontrolled asthma within an indigent multicultural and multilingual population. Of the 18 patients with very uncontrolled asthma (scores  $\geq 3$ ), three had appointments made right after being interviewed, and the remaining 15 patients were seen within two weeks. Of the other 50 patients with uncontrolled asthma, all were seen by a provider within one month of the interview.

Those that were reached had improved access to care. Unfortunately, over half were unreachable during day time business hours. Other interventions are needed to ensure all patients are assessed.

## References

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